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BUILDING SOLUTIONS

HEATLOK SHIELD

TECHNICAL DATA SHEET

Heatlok® SHIELD is a two component, closed cell, spray applied, rigid polyurethane foam system covered by the scope of standard EN 14315-1. The product is used as a thermal insulation, air barrier and vapor barrier or retarder depending on the thickness applied. The product can be sprayed onto concrete, masonry, wood, metals, gypsum board and particle board.

For more information, look at the HBS Heatlok SHIELD installation instructions.

FOAM PROPERTIES

PHYSICAL PROPERTIES		
EN 1602	Apparent density	36 – 42 kg/m^3
EN 12667	Thermal conductivity – Aged	0,027 W/mK
EN 1609	Water permeability	W 0,21
EN 12 086	Water vapour transmission	MU46
EN 1605	Deformation under specified compressive load and temperature conditions	NPD
EN 1604	Dimensional Stability (dimensional change)	DS(TH)3
EN 826	Compressive Strength	CS(10/Y)200
VOC	Release of dangerous substances	A+
EN ISO 4590	Closed cells content	CCC4

FIRE TEST RESULTS		
EN 13501-1+A1	Reaction to fire	Euro class E

PHYSICAL PROPERTIES			
Cream Time	Gel Time	Tack Free Time	End of Rise
1 second	2 seconds	4 – 5 seconds	4 – 5 seconds

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CHEMICAL PROPERTIES

LIQUID COMPONENT PROPERTIES*		
PROPERTY	**A-PMDI ISOCYANATE**	**Heatlok SHIELD resin**
Color	Brown	Brown
Viscosity @ 25°C	ca. 200 mPas	ca. 800 mPas
Density @ 25°C	ca. 1.23 g/cm^3	ca. 1.15 g/cm^3
Shelf Life of unopened drum properly stored	12 months	6 months
Storage Temperature	15 - 30 °C	15 - 30 °C
Mixing Ratio (volume)	1:1	1:1

PROCESSING CONDITIONS

RECOMMENDED PROCESSING CONDITIONS*	
Initial Primary Heater Setpoint Temperature	45 – 52 °C
Initial Hose Heat Setpoint Temperature	45 – 52 °C
Initial Processing Setpoint Pressure	85 - 95 bar
Substrate & Ambient Temperature (No humidity on the surface of the substrate)	5 - 30 °C
Service temperatures of foam	From – 60 °C to + 80 °C
Moisture Content of timber substrate	≤ 19%

*Foam application temperatures and pressures can vary widely depending on temperature, humidity, elevation, substrate, equipment and other factors. While processing, the applicator must continuously observe the characteristics of the sprayed foam and adjust processing temperatures and pressures to maintain proper cell structure, adhesion, cohesion and general foam quality. It is the sole responsibility of the applicator to process and apply Heatlok SHIELD within specification.

RECOMMENDED MAXIMUM PASS THICKNESS	
Maximum Pass	50 mm

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General Requirements: Equipment must be capable of delivering the proper ratio (1:1 by volume) of polymeric isocyanate (PMDI) and polyol blend at adequate temperatures and spray pressures. The substrate must be at least 5 degrees, with the best processing results when ambient humidity is below 80%. Substrates must also be free of moisture (dew or frost), grease, oil, solvents, and other materials that would adversely affect adhesion of the polyurethane foam. Applicators should limit the application of this product to no more than a thickness of 30mm per pass (after expansion) to avoid fire hazards (including spontaneous combustion) resulting from excessive heat generation.

STORAGE AND USAGE
Heatlok SHIELD component A (HBS Isocyanate) should be stored between 15 °C – 30 °C and component B (Heatlok Shield resin) should be stored between 15 °C – 30 °C. Component A (HBS Isocyanate) should be protected from freezing. The shelf life of component B (Heatlok Shield resin) is 3 months, component A (HBS Isocyanate) is 12 months.

Do not store material on rigs, other than what is required for the current application needs. Material left inside rigs can easily exceed this recommended temperature in the warmer months. The excessive heat will degrade component B (Heatlok Shield resin) material rendering the material useless.

If the material was transported in freezing conditions, store it in room temperature for a minimum of 24 hours to get proper material condition.

In the beginning of application apply 20 mm layer, which will be used to temper the substrate and as a primer layer. For every additional pass applicator should wait until the temperature of the foam surface has dropped below 35°C to allow any reaction heat to dissipate from the prior applications before attempting to re-apply the product. The maximum thickness of additional layers should not exceed 50 mm.

HEALTH AND SAFETY
HBS spray foam insulation products have an excellent health and safety record.

As from 24 August 2023 adequate training is required before industrial or professional use.

Spray foam components should be handled with care and in strict accordance with safety guidelines according to adequate training. Always wear appropriate personal protective equipment (PPE) as stated in mandatory training. Work in a well-ventilated area. Contact with skin and eyes; in case of contact, rinse immediately with plenty of water and seek medical attention if irritation persists. Store components in tightly sealed containers at recommended temperatures, away from moisture, heat sources, and direct sunlight. Do not handle without proper training. Always refer to the product's Safety Data Sheet (SDS) for specific instructions and emergency procedures.

RE-ENTRY AND RE-OCCUPANCY PERIODS
Time based upon ventilation during and after spray application: 24h at 40 ACH.

Number of air changes can be calculated using the following formula:

$$ACH = \frac{Fan\ Power\ in\ l/s\ *\ 3{,}6}{Room\ Volume\ in\ \mathrm{m3}}$$

If the number of ACH is not sufficient a bigger fan or multiple fans may be used

PACKAGE
The components are supplied in barrels with capacity of 200 l.

Component A – 250 kg

Component B – 225 kg

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